F_2 and F_L phase-space coverage at eRHIC

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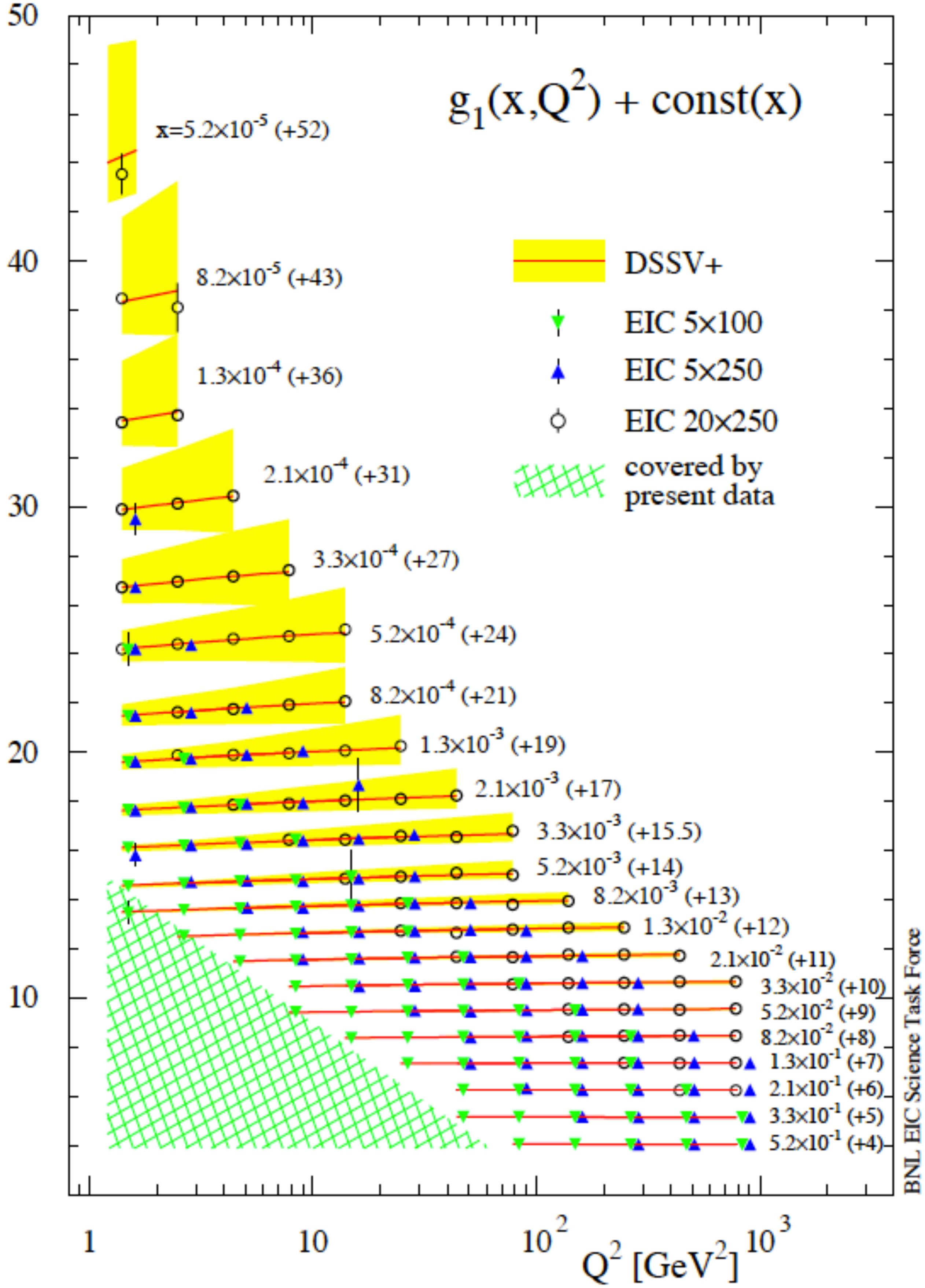
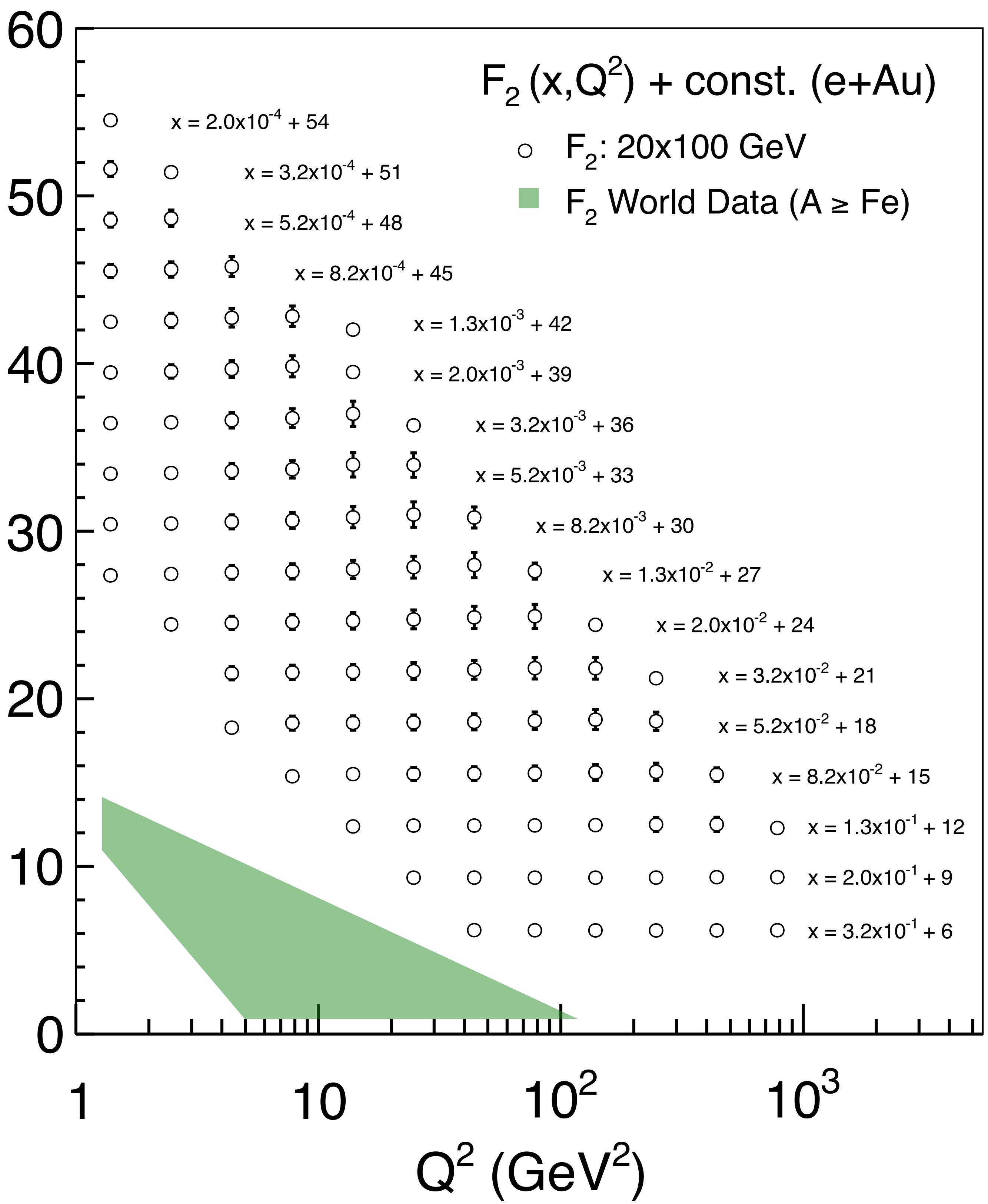
As an example - $g_1(x,Q^2)$



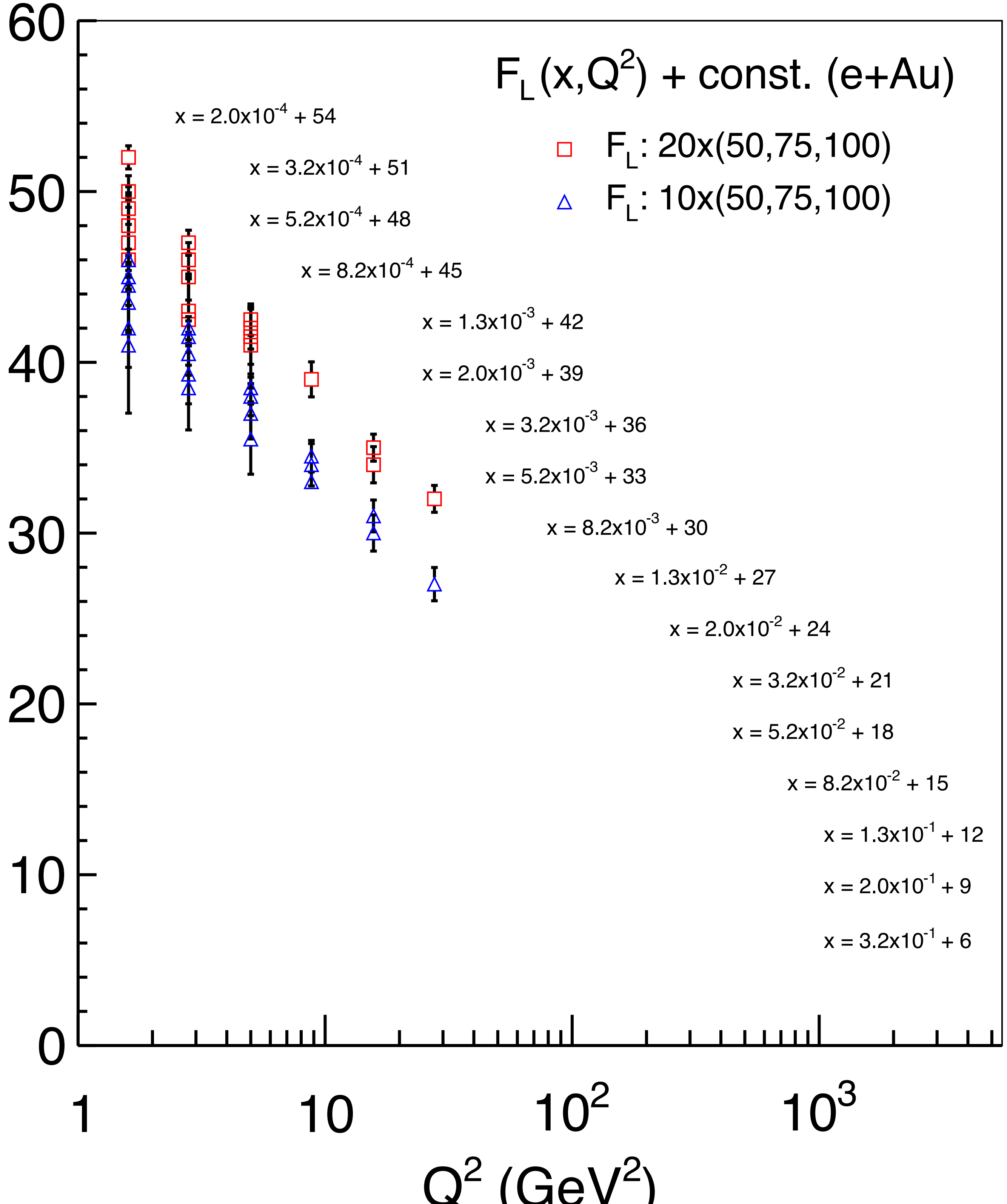
- Plot of $g_1(x,Q^2)$ taken from the eRHIC white paper
  - ➡ Present data occupies the bottom right of the plot (high-x, low-Q^2)
  - ➡ eRHIC data (5 and 20 GeV e^- beams) extends this to much higher Q^2 and much lower x
  - ➡ Also shown is a fit by Marco (DSSV+)

Now for - $F_2(x,Q^2)$



- Now plot $F_2(x,Q^2)$ for e+Au
  - ➡ Present data from DIS collisions on A ≥ Fe occupies the bottom right of the plot (high-x, low-Q^2)
  - ➡ eRHIC data (20 GeV e^- beams) extends this to much higher Q^2 and much lower x
  - ➡ Data is for 10 fb^{-1} and errors (stat+sys) are scaled by 25 to be viewable
  - ➡ No fit to the data yet, but this may be possible?

Now for - $F_L(x,Q^2)$



- Now plot $F_L(x,Q^2)$ for e+Au
  - ➡ No present data on the plot
  - ➡ eRHIC data (10, 20 GeV e^- beams, 50, 75, 100 GeV Au beams) has coverage at low-x and low-to-moderate Q^2
  - ➡ Points only used if there was good coverage in the Rosenbluth Separation plot (good lever arm in y+).
  - ➡ Phase space coverage reduced compared to F_2 as require points at the same (x,Q^2) for all 3 nuclear energies for a given e- energy
    - Extension down to 5 GeV e- beams would increase the phase space although this seems unlikely
  - ➡ Data is for 10 fb^{-1} and errors (stat+sys) are scaled by 25 to be viewable

$F_2(x,Q^2)$ and $F_L(x,Q^2)$